

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: SPOFFORD LAKE	Lake Area (ha):	286.03
Town: CHESTERFIELD	Maximum depth (m):	19.5
County: Cheshire	Mean depth (m):	9.1
River Basin: Connecticut	Volume (m ³):	26020500
Latitude: 42°54'37" N	Relative depth:	1.0
Longitude: 72°26'47" W	Shore configuration:	1.40
Elevation (ft): 716	Areal water load (m/yr):	1.94
Shore length (m): 8400	Flushing rate (yr ⁻¹):	0.20
Watershed area (ha): 1165.5	P retention coeff.:	0.82
% watershed ponded: 0.0	Lake type:	natural w/dam

BIOLOGICAL:

25 January 1996

18 July 1995

DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 98%	DINOBRYON 55%
	#2		CERATIUM 10%
	#3		
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			1.64
DOM. ZOOPLANKTON (% TOTAL)	#1	KELICOTTIA 31%	KERATELLA 26%
	#2	ROTIFER SPP. 23%	POLYARTHRA 16%
	#3		
ROTIFERS/LITER		19	27
MICROCRUSTACEA/LITER		7	6
ZOOPLANKTON ABUNDANCE (#/L)		26	38
VASCULAR PLANT ABUNDANCE			Scattered
SECCHI DISK TRANSPARENCY (m)			10.2
BOTTOM DISSOLVED OXYGEN (mg/L)		12.4	3.9
BACTERIA (E. coli, #/100 ml)	#1		< 1
	#2		14
	#3		< 1

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 6.8
Hypolimnion volume (m³): 5774500
Anoxic volume (m³): None

CHEMICAL:

Lake: SPOFFORD LAKE

Town: CHESTERFIELD

	25 January 1996		18 July 1995		
DEPTH (m)	3.0	6.0	3.0	8.0	14.0
pH (units)	6.6	6.7	7.0	7.1	6.6
A.N.C. (Alkalinity)	7.3	7.7	6.9	6.9	6.8
NITRATE NITROGEN	< 0.05	< 0.05	0.05		< 0.10
TOTAL KJELDAHL NITROGEN	0.25	0.23	0.19	0.29	0.18
TOTAL PHOSPHORUS	0.008	0.006	0.004	0.004	0.007
CONDUCTIVITY (μ mhos/cm)	108.2	112.4	112.1	109.7	110.0
APPARENT COLOR (cpu)	18	18	17	20	20
MAGNESIUM			1.45		
CALCIUM			4.9		
SODIUM			15.9		
POTASSIUM			0.71		
CHLORIDE	24	24	26		25
SULFATE			6		6
TN : TP	31	38	60		26
CALCITE SATURATION INDEX			2.8		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1995

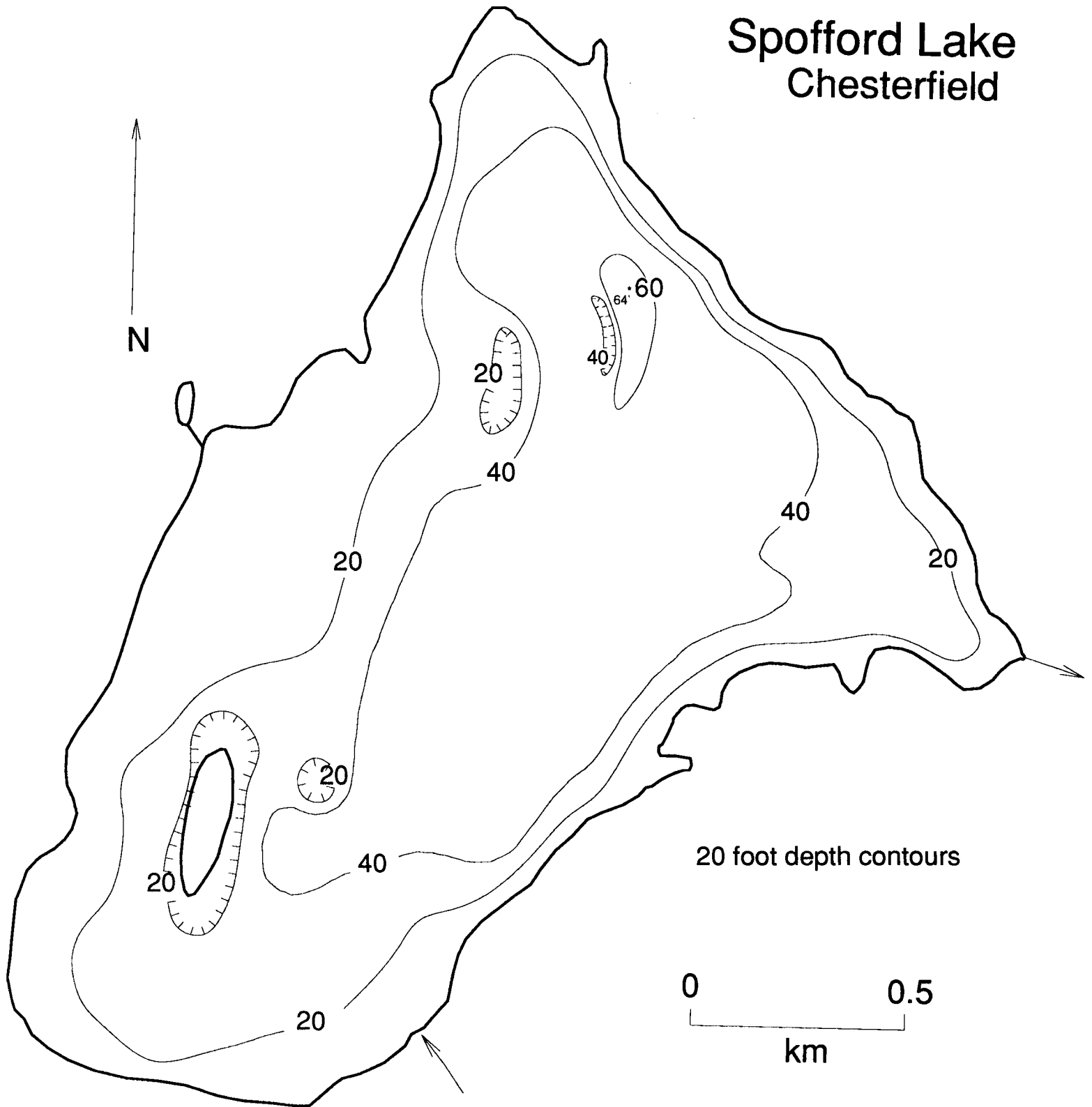
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
2	0	1	0	3	Oligo.

COMMENTS:

1. This lake was previously surveyed and classified in 1977 and 1988. There was no change in trophic class and little change in trophic parameters among the years.
2. The major biological change in the lake is the appearance of *Potamogeton perfoliatus* sometime between the 1988 and 1995 survey. Although this plant is native to the area, it behaved as an exotic (i.e., spread rapidly) after it was introduced into Cobbetts Pond, and appears to be spreading in Spofford Lake.
3. This lake has participated in DES' Volunteer Lake Assessment Program since 1988. The annual VLAP data also shows a stable trend in trophic parameters.
4. Measured cations, chloride and conductivity all showed a steady increase through the years. The VLAP data confirms the increase in conductivity over the last 8 years. The association should investigate if more road salt runoff is being directed into the lake (perhaps associated with the widening of Route 9 in the mid 1980's).
5. A daylight speed limit of 40 mph and night time speed limit of 20 mph exist on the lake.

Spofford Lake Chesterfield

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FIELD DATA SHEET

LAKE: SPOFFORD LAKE
DATE: 07/18/95

TOWN: CHESTERFIELD
WEATHER: OVERCAST, LOW 70'S

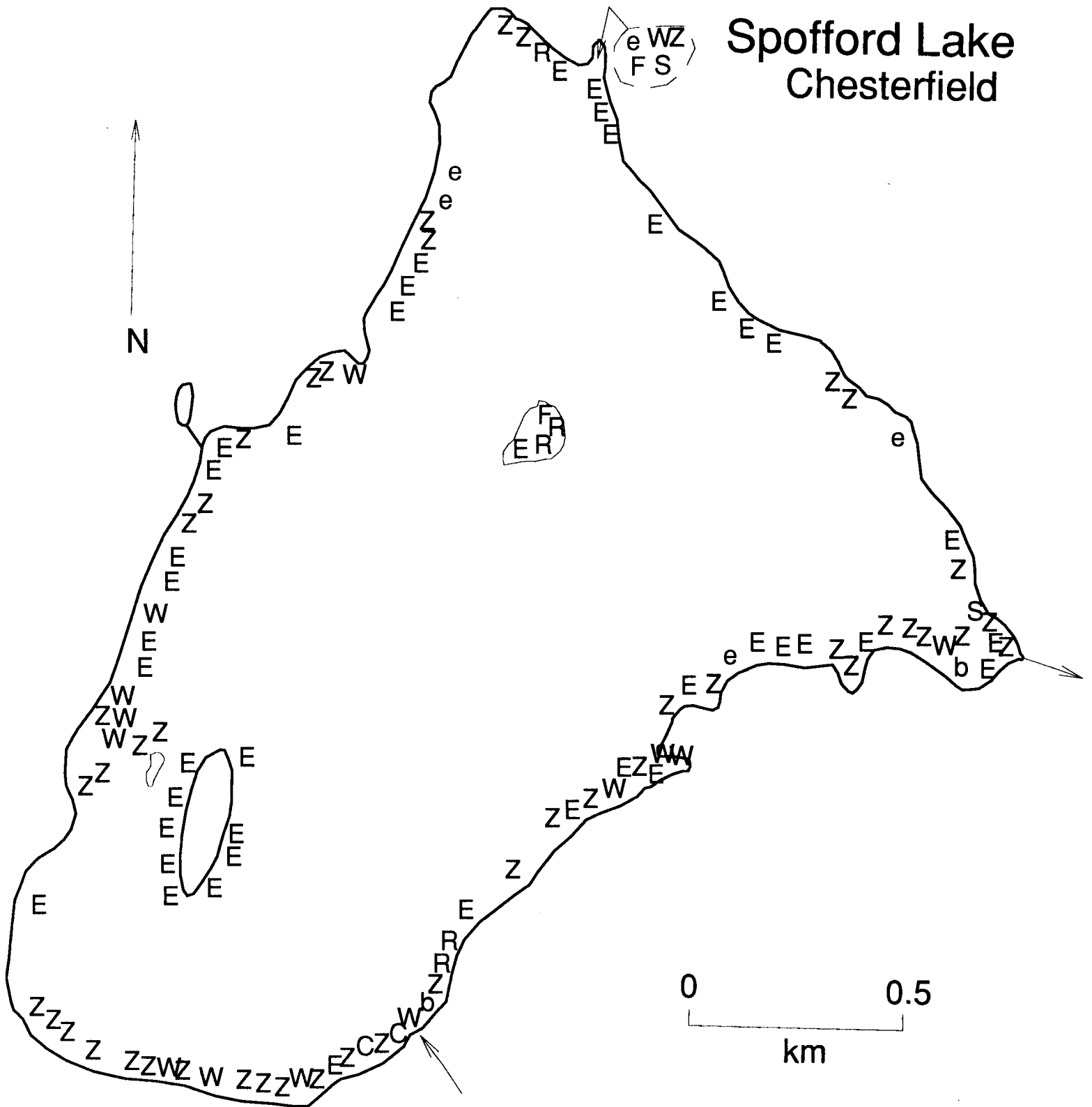
	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	23.0	8.4	97 %
	1.0	23.0	8.4	97 %
	2.0	23.0	8.4	97 %
	3.0	23.0	8.4	97 %
	4.0	23.0	8.4	97 %
	5.0	23.0	8.4	97 %
	6.0	22.8	8.4	95 %
	7.0	18.0	11.1	117 %
	8.0	15.6	11.8	115 %
	9.0	13.2	12.1	115 %
	10.0	11.8	12.1	109 %
	11.0	11.0	11.9	106 %
	12.0	10.2	11.6	101 %
	13.0	9.9	11.0	95 %
	14.0	9.2	9.6	82 %
	15.0	9.0	8.2	71 %
	16.0	9.0	6.1	53 %
	17.0	8.5	5.3	44 %
	18.0	8.5	3.9	32 %

SECCHI DISK (m): 10.2
BOTTOM DEPTH (m): 18.5
TIME: 1200

COMMENTS:

*Dissolved oxygen values are in mg/L

Spofford Lake Chesterfield



[illegible]